

**PATENT****REMARKS**

The Final Office Action mailed 8/25/2005 has been carefully considered. Applicants submit a Request for Continued Examination with this Reply. Reconsideration of this application, in view of the following remarks, is respectfully requested.

**Amendments to the Specification**

With reference to the substitute specification submitted with the Reply filed on 4/18/2005, paragraph [0001] of the specification has been updated with an issued US patent number for one of the related applications cited in that paragraph. Paragraph [0025] has been rewritten to replace the informal "OCR'ing" with a more suitable verb phrase, and to correct the title of the referenced application.

Paragraph [0015.1] has been added to include material taken from US 5,315,098 which is incorporated by reference in Paragraph [0024] at page 13. Specifically this new paragraph includes text in US 5,315,098 from col. 1, lines 50 – 65 and col. 2, lines 8 – 16. Paragraph [0024] has been rewritten to include the reference in US 5,315,098 at col. 2, lines 27 – 30 to the application filed by Bloomberg entitled "Self Clocking Glyph Shape Codes." The reference to the application has been updated with an issued patent number. None of this added text adds new matter to the application.

Paragraph [0019] has been rewritten to add several lines of text from Application No. 09/574,268 (now issued as US 6,862,113) which is incorporated by reference into the subject application in paragraph [0019] at page 11. Specifically, text from col. 1, lines 58 – 67 to col. 2, line 1, and from col. 2, lines 28 – 38 has been added. These amendments do not add new matter to the application.

**PATENT****The Claims**

Claim 5 has been amended to clarify that the language translation data encoded in machine-readable code is embedded in the input image data such that the language translation data is not human-readable when the document is rendered. Support for this amendment is found in the specification in paragraph [0024] and in previously presented claim 1.

Claims 3 and 6 have been amended to more particularly identify the embedded machine readable code as self-clocking glyph shape codes. This language is supported in the specification in the text added to the specification in this amendment. As noted above in the discussion of the amendments to the specification, US Patent 5,315,098, which is incorporated by reference into the subject application at page 13, references a then-pending Application No. 07/560,514, filed Jul. 31, 1990 by Bloomberg et al. which subsequently issued as US Patent 6,076,738. Note also that this patent has since been reissued as RE38,758 on July 19, 2005. RE38,758 is referenced on the accompanying IDS.

Claim 8 has been amended to further define an assist channel, as described in paragraph [0019] of the specification. Claims 9 and 10 have been amended to more closely conform the language in these claims to the specification at paragraphs [0019] and [0030] – [0032].

New claims 11 – 17 have been added to the application. With reference to the paragraph numbering in the substitute specification, support for claims 11 and 15 may be found in paragraph [0026], support for claims 12 and 16 may be found in paragraph [0027], and support for claims 13 and 17 may be found in paragraph [0028]. Support for independent claim 14 may be found in the specification at paragraphs [0017], [0018], and [0024] – [0028]. After entry of this amendment, claims 1 – 17 are pending in this application, including independent claims 1, 5 and 14.

**PATENT****Information Disclosure Statements**

Accompanying this amendment is an Information Disclosure Statement (IDS) that includes references to several US patents.

Applicants have previously mailed two Information Disclosure Statements in this application. The first IDS was mailed in February, 2001 citing two foreign references. The second IDS was mailed in August, 2003, also citing two foreign references and the results of an EPO search report. The undersigned acknowledges receipt of a copy of the Information Disclosure Statement (IDS) filed in August, 2003 with the Examiner's initials. The undersigned notes that a copy of the IDS mailed in February, 2001 has not yet been returned with the Examiner's initials showing that the Examiner has considered and made the cited references of record in this application. Applicants have confirmed through PAIR that this IDS was received. It is respectfully requested that consideration of this document be acknowledged in the next Office Action.

**Rejection under 35 U.S.C. 102(b)**

In the Office Action, Claims 1 – 10 were rejected, in paragraph 4, under 35 U.S.C. § 102(b) as being anticipated by US 5,748,805 issued to Withgott et al. (hereafter Withgott). It is respectfully submitted that the Office Action does not state a *prima facie* case of anticipation. Reconsideration of this rejection is respectfully requested in view of the following remarks.

Anticipation under 35 U.S.C. § 102 requires that each and every claim limitation be disclosed by the applied reference. In the context of court review of a defense to infringement on the grounds that a patent was invalid due to lack of novelty under 35 U.S.C. § 102, the Federal Circuit has said "[t]he identical invention must be shown in as complete detail as is contained in the ... claim," *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), and "[w]hen the defense of lack of novelty is based on a printed publication that is asserted to describe the same invention, a finding of

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anticipation requires that the publication describe all of the elements of the claims, arranged as in the patented device," *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1349, 48 USPQ2d 1225, 1229-30 (Fed. Cir. 1998). Applying that standard to the subject application, to make a *prima facie* case of anticipation, the Examiner must show that the Withgott reference describe all of the elements of independent claims 1 and 5, as arranged in those claims.

**Discussion of the Withgott reference.**

The Withgott disclosure teaches a method and apparatus for applying morphological image criteria that identify image units in an undecoded document image having significant information content, and for retrieving related data that supplements the document either from elsewhere within the document or a source external to the document. (Withgott, Abstract.) The disclosure is clear that the input to the method is an undecoded document image. See, for example, col. 3, lines 8 – 13 ("...supplemental data is retrieved for association with the electronic document which is relevant to significant portions of the document selected without decoding of the document.") See also col. 3, lines 30 – 34 ("In accordance with one aspect of the invention, a method for processing an undecoded document image is presented. According to the method, the document image is segmented into image units having information content without decoding of the document image.") See also col. 5, lines 42 – 50 ("The first phase of the image processing technique of the invention involves a low level document image analysis in which the document image for each page is segmented into undecoded information containing image units (step 20) using conventional image analysis techniques; ...") See also col. 8, lines 42 – 52 ("Through use of equipment such as illustrated in FIG. 2, the identified word units 11 are morphologically detected; that is, significant morphological (structural) image characteristics inherent in the image form of the word units are detected. The non-content based image recognition aspect of the invention allows image processing of documents to provide integral information about the documents without first converting text in the document to character codes.") See also col. 8, lines 53 – 58 ("A salient feature provided by the method of the invention is the

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initial processing and identification of significant word units being accomplished without an accompanying requirement that the content of the word units be decoded. More particularly, to this stage in the process, the actual content of the word units is not required to be specifically determined.”)

The Withgott reference further discloses that “[t]he second phase of the document analysis according to both method embodiments of the invention involves further processing (step 50) of the identified image units in connection with the supplemental data retrieval. The further processing can be accomplished using a number of different techniques, depending upon the particular application. For example, word units 11 (FIG. 3) that have been identified from the scanned document may be decoded (step 52) by optical character recognition techniques.” (Withgott, col. 9, lines 5 – 13.) With continued reference to this second phase, Withgott discloses that “[t]he decoded word units are then matched (step 54) with associated supplemental data in a conventional manner. For instance, in one embodiment, the supplemental data is contained in a data base 18 (see FIG. 2) that may contain specific data pertaining to the specific decoded word units. Data base 18 may be, for example, a dictionary containing definitions of the decoded words, translations of foreign words, or cross-references to related documents.” (Withgott, col. 9, lines 15 – 22.)

With respect to the output of the method discussed in the Withgott reference, Withgott discloses that “[t]he supplemental data is then retrieved and outputted (step 60) to an appropriate output device. In the embodiment exemplified in FIGS. 3 and 4, for example, the supplemental data is translated words 45 corresponding to the words underlined by the user. In this case, the translated words are outputted by adding them to the document image in a conventional manner so that they appear in the margin adjacent the line containing the words underlined by the user when the document image is printed or displayed, as shown in FIG. 4.” (Withgott, col. 9, lines 26 – 35; see also the “translating copier” example at col. 9, lines 36 – 58.)

**PATENT****Discussion of the patentability of Claims 1 – 4.**

The Office Action cites, at page 2 that the Withgott reference teaches the first element of claim 1 of receiving input text data indicating text of a document in a first human-readable language with reference to Figure 4, element 7.

However, as discussed above, Figure 4 in Withgott represents the output document of the method discussed therein. Element 7 in Figure 4 is a copy of the text image that was the input to the method (shown also in FIG. 3); the method disclosed in Withgott receives the text image which is not decoded into text. Figure 4 cannot therefore teach element 1 of claim 1 of receiving input text data indicating text of a document in a first human-readable language.

However, it has been noted above that Withgott does disclose that word units 11 (FIG. 3) that have been identified from the scanned document may be decoded (step 52) by optical character recognition techniques. Applicants assume for the sake of discussion herein that these decoded word units may be input text data indicating text of a document in a first human-readable language as required by element 1 of claim 1.

The Office Action cites, at page 3 that the Withgott reference teaches the encoding element of claim 1 with reference to col. 6, lines 38 – 42, noting, apparently, that encoding may be interpreted to mean a bit map. However, this passage of Withgott is discussing the processes used to identify the word units of the undecoded input document (e.g., scanned image). This passage merely defines the term "image unit" to denote "an identifiable segment of an image such as a number, character, glyph, symbol, word, phrase or other unit that can be reliably extracted." This passage has nothing to do with encoding the translation data in a machine-readable code, wherein the machine-readable code is not human-readable when rendered, as required by claim 1.

However, Applicants have assumed above, for the sake of discussion herein, that the decoded word units may be input text data indicating text of a document in a first human-readable language as required by element 1 of claim

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1. Assuming further that Withgott teaches the translation operation to produce translation data (col. 9, lines 28 – 30, “the supplemental data is translated words 45 corresponding to the words underlined by the user”), the disclosure at col. 9 discussing the output operation of the translation data should be reviewed to see if any portion of it teaches the requisite encoding and merging steps of claim 1. Withgott teaches that “the translated words are outputted by adding them to the document image in a conventional manner so that they appear in the margin adjacent the line containing the words underlined by the user when the document image is printed or displayed, as shown in FIG. 4.” (Withgott, col. 9, lines 30 – 35.) Even if, for the sake of argument, the encoding step is interpreted to mean producing image data in the form of a bit map from the translation data, and the merging step is interpreted to mean the merging of the original image data with the supplemental translation data encoded as bit map data, the translation data is clearly rendered on the output document in a human readable form. Thus, Figure 4 of Withgott cannot teach the encoding and merging elements, since the encoding element of claim 1 requires that the machine readable code not be human-readable when rendered. Thus the bit map encoding of the translation data in Withgott, since it is human-readable when rendered, is not the machine readable code of claim 1.

The Office Action cites, at page 3 that the Withgott reference teaches the merging element of claim 1 with reference to col. 10, lines 49 – 55 and col. 9, lines 28 – 29. The passage at col. 10 appears to suggest that the supplemental data need not be decoded into text from the image or word units found in the undecoded input document; direct retrieval using only image characteristic word unit recognition techniques may be performed in the case of supplemental data which is also stored as bit mapped image data compatible with the image data of the source document to be supplemented. This passage seems to preclude the need for an encoding step altogether: if indeed the supplemental translation data is never represented as text data, then there would be no need to “encode” it as bit map image data, using the interpretation given to encoding in the Office Action. Thus, this passage, while it may support the “merging” step, teaches

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away from the need for an encoding step. The two lines cited at col. 9 have already been discussed above; the output of the translation data is done after the encoding step encodes the translation data in a machine-readable code, wherein the machine-readable code is not human-readable when rendered.

One of the objectives of the technique disclosed in Withgott is to provide an improved method and apparatus for electronic document processing wherein supplemental data is retrieved for association with the electronic document which is relevant to significant portions of the document selected without decoding of the document. It is another object of the invention disclosed in Withgott to provide a method and apparatus of the type described that may be used to provide translations for selected words in a source document. It would be defeating these objectives to encode the supplemental translation data in a machine-readable code, wherein the machine-readable code is not human-readable when rendered. Even in the example of the reading machine for the blind described in Withgott at cols. 9 – 10, the discussion of the output of the supplemental data states “words thus identified as significant words or word units can then be decoded using optical character recognition techniques, for example, for retrieval of supplemental data which permits, for example, Braille versions of the significant words to be printed using a plastic-based ink printer associated with the reading machine.” Clearly, Braille output is human-readable when rendered and so is not the machine readable code required in claim 1.

It is impermissible for the Office Action to make a *prima facie* case of anticipation by selectively arranging elements of the reference's teachings to imply that the reference teaches something it doesn't. It is respectfully submitted that nothing in Withgott teaches the encoding step required in claim 1 of encoding the translation data in a machine-readable code, wherein the machine-readable code is not human-readable when rendered. Since the encoding step is not taught, it follows that the merging step of claim 1 is also neither taught nor disclosed in Withgott.



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With respect to dependent claim 2, the Office Action recites the passage at col. 9, lines 25 – 31 and Figure 4. These have already been discussed above: the hardcopy document produced by the method of claims 1 and 2 has merged image data that includes the translation data encoded in the machine readable code, wherein the machine-readable code is not human-readable when rendered. Figure 4 clearly shows the translation data (element 45) in human readable form.

With respect to dependent claim 3, Applicants have amended claim 3 to clarify the machine readable code is a self-clocking glyph shape code. The term "glyph" is typically used in Withgott, and in typography generally, to refer to a character symbol in a font; the amended language in claim 3 is distinguishable from the term "glyph" and refers to a particular type of encoding as shown in Figure 4 of the subject application.

With respect to claim 4, the Office Action interprets the word "over" in claim 4 to mean "adjacent," and again refers to documents containing supplemental translation data adjacent the source document text, as shown in Figure 4. If applicants had intended to use the word "adjacent" in dependent claim 4, they would have. This claim is supported in the specification at, for example, paragraph 24 which refers to an embodiment in which the glyph shape codes are modulated in an area to form a glyph half tone image as described in the referenced patents. The Withgott reference does not teach the merging step further comprising the step of superimposing the machine-readable code over the input text data.

For the foregoing reasons, it is respectfully submitted that the Office Action does not make a *prima facie* case of anticipation under 35 U.S.C. § 102(b) with respect to claims 1 - 4. It is respectfully requested that the rejection be withdrawn.

**PATENT****Discussion of the patentability of Claims 5 – 9.**

The Office Action cites, at page 4, that the Withgott reference teaches the first portion of the first element of claim 5 of receiving image data indicating a document with reference to Figure 4. As already noted above, Figure 4 is the output document of the technique disclosed in the Withgott reference; it is not an input document and so it is not received, it is outputted. (See col. 9, lines 25 – 34.) The Office Action further cites, at page 4, that the Withgott reference teaches the next clause of claim 5, wherein said document comprises human-readable text written in a first language (Figure 4, element 7) and at least one foreign language translation of said human-readable text ((Figure 4, element 45) encoded in machine-readable code, referring to the “machine readable code” as a bit map image. The Office Action references the term “glyph” but it is respectfully pointed out that claim 5 does not contain the term “glyph.”

Amended claim 5 requires that said image data indicating a document include language translation data encoded in machine-readable code embedded in said image data such that the language translation data is not human-readable when said document is rendered. As already discussed extensively above, Figure 4 clearly shows the language translation (supplemental) data (45) rendered on the output document of Figure 4, adjacent to the original input text (7). Figure 4 cannot therefore teach element 1 of claim 5.

As noted in the above discussion of the Withgott reference, the input document to the technique disclosed in Withgott is an undecoded image document, such as the document illustrated in Figure 3. However, while Figure 3 may illustrate the first portion of the first element of claim 5 (receiving image data indicating a document, wherein said document, when rendered, comprises human-readable text written in a first language), neither Figure 3 nor any other part of the Withgott disclosure teaches the second portion of the first claim element of claim 5 which requires that said image data including language translation data encoded in machine-readable code embedded in said image

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data such that the language translation data is not human-readable when said document is rendered.

The Office Action cites, at page 4, that the Withgott reference teaches the receiving selection data element of claim 5 at col. 3, lines 52 – 54 and col. 9, lines 44 – 46. Claim 5 includes a receiving step for receiving selection data indicating a selected foreign language for translation of said human-readable text written in the first language. The passage at col. 3 refers to foreign language translation data corresponding to selected image units, not to a selected foreign language. The passage at col. 9 refers to a user entering through an appropriate user interface a request that all significant words in the document or document portion be automatically selected in accordance with either predetermined or user-selected significance criteria. Again, this passage refers to words and not to a selection of a foreign language, as required by claim 5. It is respectfully submitted that the Office Action fails to show where Withgott teaches receiving selection data indicating a selected foreign language for translation of said human-readable text written in the first language.

The third element of claim 5 recites the step of producing a human-readable translation of said document in said selected foreign language using the language translation data encoded in said machine-readable code. The Office Action states that the phrase “using the language translation data encoded in said machine-readable code” is taught in Withgott at col. 9, lines 28 – 32 and col. 10, lines 50 – 55, with reference again to the machine readable code being taught by a bit map of a glyph. As previously noted, the Withgott disclosure does not teach the second portion of the first claim element of claim 5, which requires that said image data including language translation data encoded in machine-readable code embedded in said image data such that the language translation data is not human-readable when said document is rendered, and does not teach the second element of claim 5 with respect to receiving selection data indicating a selected foreign language for translation of said human-readable text written in the first language. It follows then that Withgott cannot teach the step of

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producing a human-readable translation of said document in said selected foreign language using the language translation data encoded in said machine-readable code.

With respect to dependent claim 6, Applicants have amended claim 3 to clarify the machine readable code is a self-clocking glyph shape code. The term "glyph" is typically used in Withgott, and in typography generally, to refer to a character symbol in a font; the amended language in claim 3 is distinguishable from the term "glyph" and refers to a particular type of encoding as shown in Figure 4 of the subject application.

With respect to amended claim 8, the Office Action recites the passage at col. 10, lines 46 – 54 as teaching the limitation of amended claim 8 which includes the step of utilizing an assist channel to perform the OCR operation on the human-readable text, wherein the assist channel encodes information that assists in the identification of failures of the OCR operation and is included in the language translation data. This passage merely mentions that OCR may be used in conjunction with morphological identification techniques. No mention is made of using an assist channel that assists in the identification of failures of the OCR operation.

With respect to claims 9 and 10, Withgott does not disclose the limitations in these claims for the same reasons set forth above with respect to claim 5, first and second elements. In addition, none of the recited passages teaches the identifying and decoding steps of claim 9. In particular, if the "machine readable code" of claims 5 and 9 were interpreted to mean a bit map image, then no decoding would be necessary: the bit map image is ready for rendering and display. A decoding operation such as that set forth in claim 9 is needed when the language translation data is a machine-readable code embedded in the image data, as set forth in claim 5.

For the foregoing reasons, it is respectfully submitted that the Office Action does not make a *prima facie* case of anticipation under 35 U.S.C. § 102(b)

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with respect to claims 5 - 9. It is respectfully requested that the rejection be withdrawn.

**Discussion of the patentability of New Claims 11 – 17.**

With respect to new claims 11 – 13 and 15 – 17, Withgott does not discuss the process of language translation in any detail, and it is clear from examining the language of these these claims that Withgott does not teach or disclose these claim elements. In claims 11 and 15, the language translation data encoded in the machine-readable code is a complete human-readable translation of the human-readable text in a compressed form. Clearly, the objective of the Withgott technique is to retrieve supplemental data that is relevant to significant portions of the document. The translation data is retrieved from a data base (see col. 9, lines 15 – 27) and is not encoded in machine readable code that is included in the image data representing the document. In claims 12 and 16, the language translation data encoded in the machine-readable code includes a plurality of editing operations. Withgott neither teaches nor suggests that the supplemental data retrieved includes or comprises editing operations. In claims 13 and 17, the language translation data encoded in the machine-readable code includes a correction code indicating correct word usage in the selected foreign language. Again Withgott neither teaches nor discloses the supplemental data being a correction code.

Independent claim 14 recites an encoding step which requires encoding each set of the language translation data in a machine-readable code segment, wherein the machine-readable code segment is not human-readable when rendered as image data in the output document. This element is not taught or disclosed by the Withgott reference for the reasons discussed above with respect to the encoding elements in claims 1 and 5.

**Fee Authorization And Extension Of Time Statement**

Fees for the filing of a Request for Continued Examination and an extension of time for one month have been authorized in the accompanying

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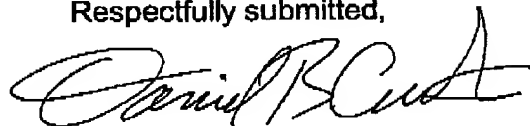
transmittal papers. The undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any additional extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

**Reconsideration Requested**

The undersigned respectfully submits that, in view of the foregoing remarks, the rejections of the claims raised in the Office Action have been fully addressed and overcome, and the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that these claims be allowed, and that this case be passed to issue.

Should any additional issues remain, or if I can be of any additional assistance, please do not hesitate to contact me at (650) 812-4259.

Respectfully submitted,



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